Geographical Coverage Expands

Xerox Computer Services recently expanded the scope of its computer-based service by opening three new sales offices: Milwaukee, Philadelphia and Houston.

Now operating out of 11 branch sales offices, Xerox Computer Services since 1970 has developed a national data communications network serving clients in 110 cities in 33 states. This network consists of 90,000 miles of leased telephone lines, of which about 40,000 are interstate. Over 1500 on-line customer terminals utilize the service.
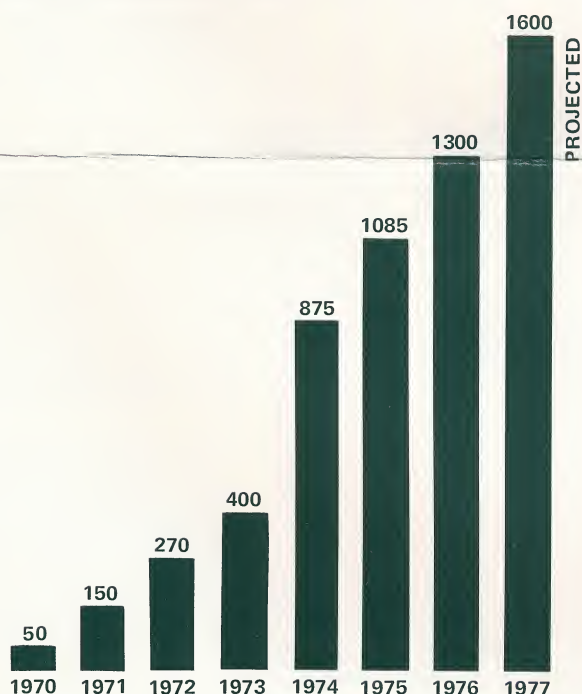
Customers using the Xerox time-shared business service include manufacturers, distributors, financial service companies, municipalities and utilities. Clients access large computers at Xerox data centers, through computer terminals at their own loca-tions, to process all types of business transactions with an on-line, completely integrated set of Xerox software packages and support systems (The Inter-active Accounting System — IAS).

The Xerox service offers its users the power of large-scale computing, without the heavy invest-ment in management time, capital and operating expense normally associated with computer equip-ment, programming, maintenance, operations and support.

Current users are businesses with sales volumes of $1 million to $100 million annually, and govern-ment agencies serving from 5,000 to 125,000 people.

Roof Falls In On Sunday – Business As Usual On Monday

A stormy March night in Dallas brought an un-usually heavy rain — 6½ inches in just a few hours on Saturday night. At the Xerox Regional Distri-bution Center (RDC), which ships copier supplies and paper to thousands of customers throughout the Southwest, the storm caused the roof to fall in — literally. By 5:30 Sunday morning, water totally covered the floor of the data entry room, and had badly damaged 20 Xerox terminals.
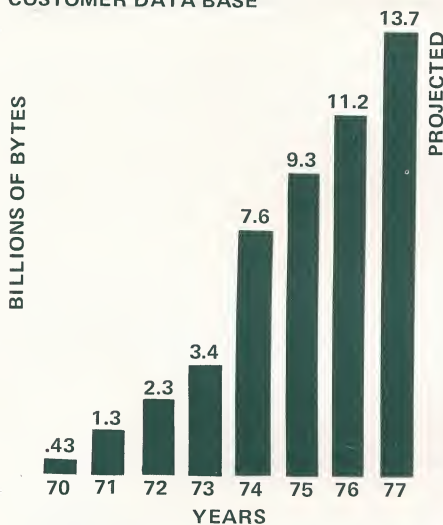
A sales and service disaster seemed imminent. Hundreds of phone and written orders would arrive Monday morning, and the 20 terminals were needed to enter orders, and create pick lists on a same-day schedule, through contact with the com-puters at Xerox Computer Services. With the ter-minals down, there was no way to transmit the large volume of orders to the remote warehouses for shipment. Starting at 7:30 Sunday morning, however, a remarkable series of events took place:

TERMINALS ON-LINE TO XEROX DATA CENTERS

Year	Terminals
1970	50
1971	150
1972	270
1973	400
1974	875
1975	1085
1976	1300
1977	1600 (PROJECTED)

1

13th Computer System Installed

The 13th large computer system to be installed by Xerox Computer Services recently began processing. The 13 mainframe Xerox Sigma 7 and Sigma 9 computers are spread among three separate data centers in the Los Angeles basin. Supporting these large systems are 20 Sigma 3 and Xerox 530 computers, which function as communications concentrators and front-end processors.

CUSTOMER DATA BASE

BILLIONS OF BYTES / YEARS

Year	Billions of Bytes
70	.43
71	1.3
72	2.3
73	3.4
74	7.6
75	9.3
76	11.2
77	13.7 (PROJECTED)

The size of the total customer base, in excess of twelve billion characters, is one of the largest ever assembled for commercial time-sharing. Over 400 disk drives are currently required to store this information.

Performance Enhanced By Microprocessor

To extend the processing power of these large computers, Xerox Computer Services has recently developed, and begun the installation of a "symbiotic processor" called the HF-32. Based on an Intel microprocessor, the HF-32 attaches to a main system to perform some of the more routine CPU functions required. The result is that the two units are more effec-

tive working together than they would be separately. The performance of the Sigma 9 is expected to improve by a factor of two during night-time report printing, and by 1.5 during interactive daytime processing. By installing HF-32 units on all its main frames, Xerox Computer Services will extend the life of the current Sigma equipment well into the 1980's.

Reduced Prices For Wholesale Distribution System

The Xerox 1-2-3 System, an on-line service specifically designed for wholesale distributors, has been reduced in price by approximately 10%. Cost of the service can now be as low as $750 a month.

Xerox 1-2-3 provides integrated order processing, inventory control, accounts receivable and sales analysis functions for distributors with annual sales as low as $500,000. While 1-2-3 can be installed by a first-time data processing user, it is flexible enough to accommodate the needs of larger, multi-location distributors. 1-2-3

James S. Campbell, Xerox Computer Services President, shown with part of 12 billion character data base.

users can realize rapid business growth without the need to upgrade their data processing capabilities.

General Purpose Time Sharing Extends Client Capabilities

A general purpose time-sharing capability (GTS) has been added to the services available through the Xerox computer and communications network.

Announcement and first demonstration of this new capability took place April 19, 1977, at the Southern California Business Show in Los Angeles.

GTS permits interactive computing from remote terminals using COBOL, Fortran, APL or Basic programming languages, and includes a comprehensive package of utility and service processors. GTS may be used as a stand-alone service or as an extension of the interactive accounting system.

GTS offers several benefits not included in more traditional time-sharing services. These include the use of high-speed daisywheel Xerox 1340 terminals with error-correcting features, interchangeable batch or interactive modes of operation and a high-speed printing option for large-volume reports through Xerox branch offices.

Present customers using Xerox IAS will access the new general time-sharing service using the same computer terminals and lines they now use.

Customers will be able to develop, compile and execute their own special application programs. Data may be transferred between IAS and general time-sharing files, which will enhance the customer's capability to do simulations and projections based on current operating and financial data.

Business As Usual

Sunday

7:30 a.m.
RDC and Xerox Computer Services key personnel notified by phone of damage.

8:30 a.m.
Crisis meeting begins to discuss contingencies.

10:00 a.m.
Ten available terminals located at Xerox Computer Services in Los Angeles, rushed to LA Airport.

12 Noon
Empty warehouse next door identified as temporary processing location. Phone company begins rerouting of 1200 pairs of telephone lines to temporary site.

2:00 p.m.
Terminal service vendor arrives, selects least damaged terminals and removes for immediate repairs.

10:00 p.m.
Ten terminals arrive from Los Angeles by air freight, installation begins at temporary site.

Monday

7:00 a.m.
Phone line rerouting partially completed, three terminals up and running.

8:30 a.m.
Phone orders begin to arrive, three terminals commence processing.

12 Noon
Phone lines fully rerouted, ten terminals processing.

5:00 p.m.
Over 500 orders received on Monday, all entered and shipped; temporary operation transparent to customers.

Tuesday

Service vendor returns six repaired terminals. Sixteen terminals processing. No service interruptions or problems.

According to Dallas RDC Manager Homer Babbit, "Many people rose to the occasion in reacting to this crisis. Our own staff, Xerox Computer Services personnel in Dallas and Los Angeles, the telephone company installers, the terminal service repairmen, all performed in an outstanding manner to keep this disaster from affecting service to our customers.

"On Sunday morning I wouldn't have thought it possible, but Monday morning, at least from our customers' viewpoint, it was 'business as usual'!"

Municipal Usage Of Xerox Service Grows

Several local government agencies have recently signed agreements to utilize the Xerox municipal information system. In Northern California the cities of San Raphael (population 46,000), San Carlos (pop. 30,000), Daly City (pop. 80,000) and Burlingame (pop. 32,000) have begun processing their cities' financial and operating data using the Xerox Computer Services' network. The Municipal Information System, now being offered nationwide, is currently bringing data processing capabilities to 29 cities in California, serving a total population of over 1.3 million.

Water Conservation

A number of Northern California municipalities have instituted a "per capita" water rationing system to conserve this scarce resource. The city councils and city management of Santa Rosa, Petaluma, Daly City and Milpitas agreed to develop the new water rationing program in cooperation with Xerox. A highlight of the system is a "Consumer Alert" report which assists citizens in tracking their water usage on a timely basis.

Personnel System Announced

The Employee Information System (EIS) offers new capabilities for government and industry. Using this Xerox application, organizations can track, identify and analyze employee history and performance in a number of areas, including: equal employment opportunity, job skills, salary, career, job assignment and status, education and benefits. In conjunction with The Reporter,® a data display tool, EIS offers great flexibility in reporting upon any organization's key personnel resources.

Cash Flow Improves, Faster Inventory Turnover With Computer Service

Zimmerman Brush has a broad product line, a national distribution network—and a computer system that helps gear production and inventories to current market demand.

The Xerox Interactive Accounting System (IAS) used by Zimmerman Brush is deeply involved in the financial side of the business. It prices the sales order, creates the customer invoices, updates the receivables and payables, produces the payroll, posts to the general ledger, and pinpoints cost and profit performance all along the line.

However, its role goes well beyond conventional accounting functions into virtually every facet of day to day operations, from planning materials requirements to controlling production schedules.

A major contribution of the system, in President Mike Zimmerman's view, is maintaining the delicate and important balance between raw materials and finished goods inventories on the one hand, and customer service level on the other.

"With computer control, we have managed to slash average inventory cost by 30 percent while stepping up the rate of inventory turnover. At the same time, we have improved customer service to the point where over 85 percent of incoming orders are turned around the same day, or the next morning," he points out.

Now, using the Xerox system, orders are entered on-line via the interactive terminal, and the procedure is simple, foolproof and exceedingly swift, according to Dave Worley, Zimmerman's director of systems. "If the order is in
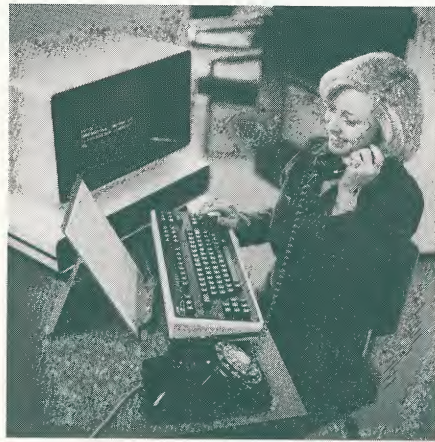
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here by 11:00 A.M., we'll have it picked, packed and on its way that afternoon, assuring the customer of the fastest possible delivery. And the order invoice will go out that evening, assuring us of a faster cash flow."

Another aspect of the system involves material requirements planning. Here the computer is reacting to situations rather than responding to transactions.

As it commits finished goods inventory to fill incoming customer orders, the system continually compares remaining stock balances against pre-set minimum levels. These are established item-by-item based on a forecast of demand that is updated every four weeks. Whenever a finished product item falls below its minimum level, the computer triggers a suggested production order to initiate stock replenishment to the desired level.

"What we have now is a closely-monitored, continually-adjusted material requirements planning cycle," says Mr. Zimmerman. "Both materials and product inventories are held at minimum levels consistent with market

demand. Costly stock-outs and production bottlenecks are sharply reduced. Operations are more efficient and economical. Management decisions are more timely and effective.

"We have been giving customers the brush for years, in a way that has kept them happy and kept us growing. With the computer at our fingertips, supporting routine operations and responding to the exception situations, there is no reason we cannot continue to keep customers happy and keep the company growing profitably," he sums up.

Manufacturing Seminar Sponsored By Xerox

Over 130 manufacturing executives from companies in the San Francisco Bay Area attended an educational seminar sponsored by Xerox Computer Services in March, 1977. The heavy turnout was spurred by the presence of guest speaker Daryl Landvater, a consultant of national reputation in the field of manufacturing systems. Mr. Landvater is the author of a series of comprehensive "MRP Reviews," and has published recommendations for a "standard system" for MRP implementation. He is associated with Oliver Wight, a pioneer in manufacturing systems design, through Manufacturing Software Systems, Inc., of Williston, VT.

Mr. Landvater spoke on two subjects: (1) Material Requirements Planning (MRP) implementation plan; and (2) Management commitments required for successful implementation.